

## Memorandum

Date: November 6, 2012  
To: Jill McKenzie – New Jersey Department of Environmental Protection  
Copies to: Dave Barsky - New Jersey Department of Environmental Protection  
Dawn Horst – Ingersoll Rand Company  
From: Mike Lambert, Scott Drew, LSRP - Geosyntec Consultants  
Subject: Soil Remediation Standard

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On behalf of Ingersoll Rand Company (Ingersoll Rand), Geosyntec has prepared this Technical Memorandum regarding the Soil Remediation Standard (SRS) for beryllium in soil to be used in the ongoing environmental cleanup at the former Ingersoll Rand facility in Phillipsburg, New Jersey (PI#012833). Specifically we are seeking to gain New Jersey Department of Environmental Protection (NJDEP) concurrence that beryllium is a naturally occurring element in Site soils and therefore not subject to remediation at concentrations that are consistent with background conditions. Based on the 2004 Site History Report which documents the operational history at the former facility, beryllium is not considered a contaminant of concern at the site.

Beryllium has typically been detected in soil at levels above the default Impact to Groundwater Soil Screening Level (IGWSSL) of 0.5 mg/kg, established in NJDEP Guidance dated December 2008. This value is based on a practical quantitation level (PQL) and is below the previously approved Alternate Remedial Concentration (ARC) of 16 mg/kg approved for the site in a January 25, 2005 letter (Attachment 1).

The background investigation approach presented herein is consistent with the following NJDEP regulations and guidance:

- Site investigation - natural background investigation of soil and ground water presented in the Technical Requirements for Site Remediation (TRSR), N.J.A.C 7:26E-3.8; and,
- Soil Investigation Technical Guidance - Site Investigation/Remedial Investigation/Remedial Action (SI/RI/RA) published by NJDEP on 21 February 2012;

The farm parcels associated with the Site have been selected as the natural background reference area for this evaluation; their location is shown on Figure 1. A Preliminary Assessment (PA) and a Site Investigation were conducted for these parcels in 2005 and identified the following:

- The parcels have not been affected by historic site operations and no observed or suspected discharges were present;
- A limited number of AOCs were identified during the PA, in accordance with the TRSR, which relate to surface water drainage features. No impacts were associated with these AOCs and No Further Action letters were issued by the NJDEP in 2002 based on the January 2002 *South Side AOC Remedial Investigation Report*. A copy of the NFA letter is provided in Attachment 2 to this letter;
- The physical properties of soils present in the farm parcel are consistent with naturally occurring soils present across the Site as shown in the attached boring logs (Attachment 3).

The above information was provided in the *Preliminary Assessment Report, Farm and Undeveloped Parcels, Ingersoll Rand Company Facility, Phillipsburg, Warren County, New Jersey* and the *Site Investigation Report – Farm and Undeveloped Areas of the Former Ingersoll Rand Co. Facility –Phillipsburg, New Jersey*. These documents were submitted to the NJDEP in July 2004 and December 2005 respectively and no response has been received from the NJDEP.

As part of the farm parcel SI a total of 28 samples were collected from surface soils up to 2.5 feet below ground surface. The samples were analyzed for trace metals, including beryllium. The results of these samples are presented on Table 1 and the following observations are made from these data:

- Beryllium was detected in 27 of the 28 samples with a range of 0.54 to 3.10 mg/kg. The one non-detectable concentration had a reporting limit of 0.61 mg/kg.
- Of the 27 detections the 25<sup>th</sup> percentile is 0.84 mg/kg and the 75<sup>th</sup> percentile is 1.50 mg/kg. The calculated outlier concentration is 2.49mg/kg, therefore the highest detected concentrations of 3.10 is a statistical outlier and not considered representative of background.
- A maximum background concentration of 2.10 mg/kg is apparent based on this evaluation.
- The spatial distribution of beryllium in the farm field soils is not indicative of a concentration gradient typically associated with a discharge as shown on Figure 1.

- These concentrations are equivalent to ranges reported for beryllium in natural soils in the Highlands (reference) as referenced in the 2003 *Ambient Levels of Metals in New Jersey Soils* developed by NJDEP research scientist Paul Sanders, Ph.D.

Based on this evaluation of natural background, it is recommended that concentrations of beryllium less than or equal to 2.10 mg/kg be considered to be due to natural background of this element in soil. Concentrations less than this level will not require remedial action, including engineering and institutional controls and site specific impact to groundwater evaluations.

## **TABLE'3**

Table 1  
Farm Field Beryllium Results  
Former Ingersoll Rand Facility  
Phillipsburg, NJ

| Sample Location               | Sample Date | Sample Depth-<br>Top<br>(ft) | Sample Depth-<br>Bottom<br>(ft) | Sample Result<br>(mg/kg) |
|-------------------------------|-------------|------------------------------|---------------------------------|--------------------------|
| L10                           | 5/4/2005    | 1.5                          | 2                               | ND (RL= 0.61)            |
| L23                           | 5/9/2005    | 1.5                          | 2                               | 0.54                     |
| L05                           | 5/3/2005    | 1.5                          | 2                               | 0.69                     |
| L01                           | 5/3/2005    | 1.5                          | 2                               | 0.71                     |
| L07                           | 5/4/2005    | 1.5                          | 2                               | 0.71                     |
| L15                           | 5/6/2005    | 1.5                          | 2                               | 0.72                     |
| L03                           | 5/3/2005    | 1                            | 1.5                             | 0.77                     |
| L04                           | 5/3/2005    | 1                            | 1.5                             | 0.80                     |
| L25                           | 5/5/2005    | 1.5                          | 2                               | 0.87                     |
| L20                           | 5/5/2005    | 1.5                          | 2                               | 0.88                     |
| L11                           | 5/5/2005    | 1.5                          | 2                               | 0.90                     |
| L02                           | 5/3/2005    | 1.5                          | 2                               | 0.95                     |
| L18                           | 5/5/2005    | 1.5                          | 2                               | 0.96                     |
| L09                           | 5/4/2005    | 2                            | 2.5                             | 1.00                     |
| L12                           | 5/4/2005    | 1.5                          | 2                               | 1.00                     |
| L13                           | 5/4/2005    | 1.5                          | 2                               | 1.00                     |
| L19                           | 5/6/2005    | 1.5                          | 2                               | 1.00                     |
| L21                           | 5/6/2005    | 2                            | 2.5                             | 1.00                     |
| L22                           | 5/9/2005    | 1.5                          | 2                               | 1.10                     |
| L14                           | 5/5/2005    | 2.5                          | 2.5                             | 1.20                     |
| L06                           | 5/4/2005    | 1.5                          | 2                               | 1.50                     |
| L16                           | 5/4/2005    | 1.5                          | 2                               | 1.50                     |
| L26                           | 6/23/2005   | 0                            | 0.5                             | 1.70                     |
| L08                           | 5/4/2005    | 1.5                          | 2                               | 1.80                     |
| L28                           | 6/23/2005   | 0                            | 0.5                             | 1.90                     |
| L17                           | 5/5/2005    | 2.5                          | 2.5                             | 2.00                     |
| L24                           | 5/6/2005    | 1.5                          | 2                               | 2.10                     |
| L27                           | 6/23/2005   | 0.5                          | 1                               | 3.10                     |
| 25th percentile detected data |             |                              |                                 | 0.84                     |
| 75th percentile detected data |             |                              |                                 | 1.50                     |

**Notes:**

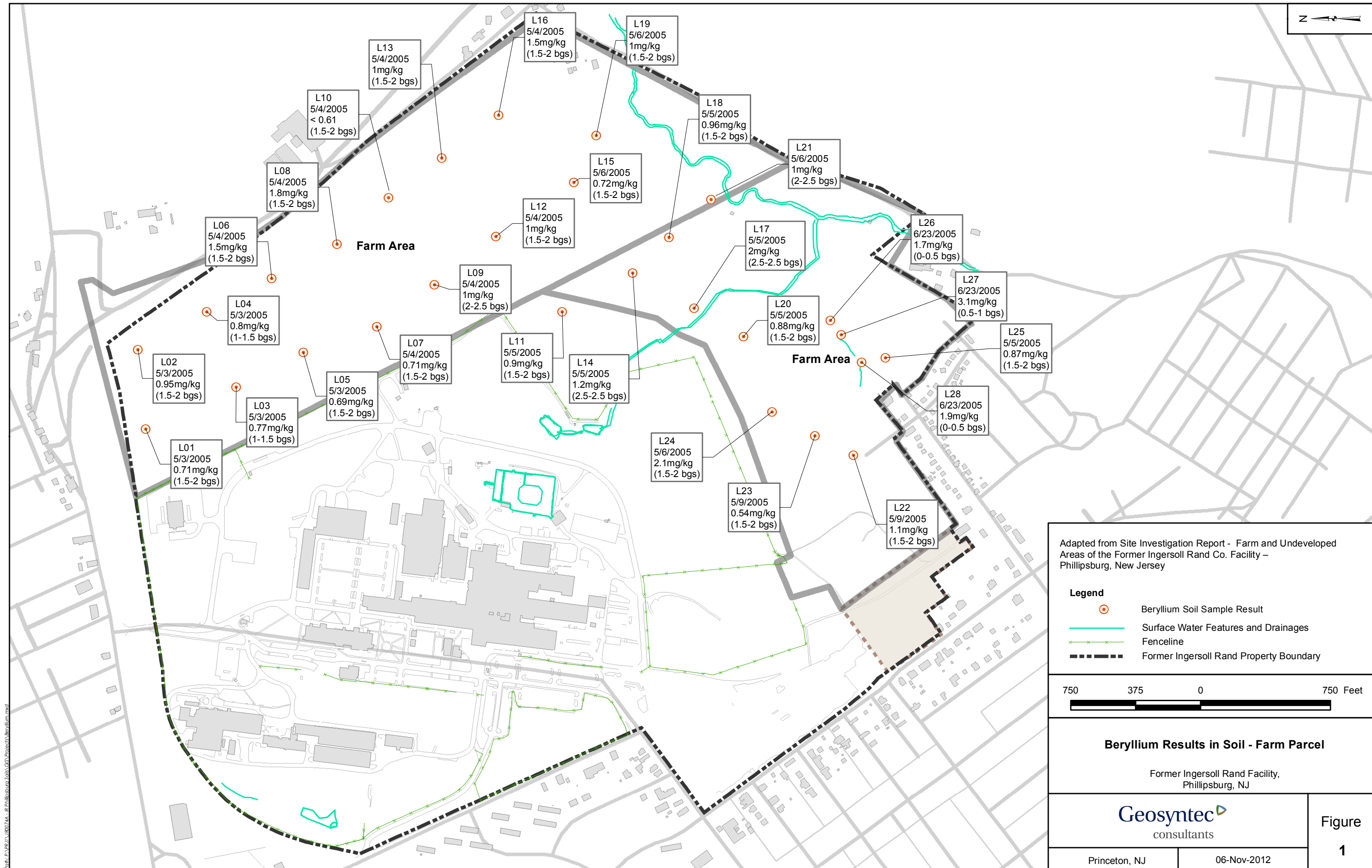
Statistical outliers based on 25th and 75th percentile.

Maximum concentration not considered statistical outlier is 2.49 mg/kg based on NJDEP  
*Soil Investigation Technical Guidance*, February 21, 2012

Data collected as part of farm field parcel site investigation and presented in:

*Site Investigation Report – Farm and Undeveloped Areas of the Former  
Ingersoll Rand Co. Facility –Phillipsburg, New Jersey*

**FIGURE'3**



# **ATTACHMENT 1**





State of New Jersey  
Department of Environmental Protection

File: 03710-Pburg-7.1  
P-burg Site File  
G.Micalizio  
C.Venezia  
N.Oliveira

S. Surman  
~~Signature~~  
~~Signature~~

Richard J. Codey  
Acting Governor

Bradley M. Campbell  
Commissioner

Office of Brownfield Reuse  
P.O. Box 028  
401 East State Street, 6<sup>th</sup> floor  
Trenton, New Jersey 08625-0028  
Telephone: (609) 292-1251  
Facsimile: (609) 777-1914

January 25, 2005

Dave Sordi, P.E., Manager  
Ingersoll Rand Corporation Environmental Engineering  
Ingersoll Rand Corporate Center  
70 North Street  
Torrington, CT 06790

Re: Ingersoll Rand Site  
Administrative Order dated March 31, 1994, last amended August 12, 2004  
942 Memorial Drive  
Phillipburg, Warren County  
Soil Reuse Proposal Dated December 2004

Dear Mr. Sordi:

The New Jersey Department of Environmental Protection (Department) has completed the review of the above referenced document. Based upon a review of the information submitted, the above referenced report is acceptable as conditioned below.

1. The Department concurs with the proposal to the excavate sludge material (approximately 2,000 cubic yards) from AOC-2 for off-site disposal.
2. The Department has established an Alternative Remediation Criterion (ARC) for beryllium at the site. The ARC is based on the revised beryllium toxicity data in USEPA's Integrated Risk Information (IRIS) database, the source of toxicity information employed by NJDEP for many of its soil remediation criteria. An ARC of 16 milligrams per kilogram (mg/kg) for beryllium is valid for this site. Please note that concentrations of beryllium were reported to be below the ARC at all three Areas of Concern (AOCs). Consequently, no constituents of concern (COCs) were identified in the former soil stockpile cover material (approximately 1,000 cubic yards) used at AOC-2 (Spray Pond Sludge Disposal Area).
3. The only remaining COC at AOC-36 was arsenic with reported concentrations (20.9 – 34.3 mg/kg) slightly above the Residential Direct Contact Soil Cleanup Criteria (RDCSCC) of 20 mg/kg. ENSR and Ingersoll Rand has the option of demonstrating that the arsenic concentrations are due to natural background per the Technical Requirements for Site Remediation (N.J.A.C 7:26E), specifically 7:26E3.10 (Site Investigation – Background Investigation in Soil).

4. Based on results presented in the *Soil Reuse Proposal - AOCs 2, 5, & 36*, The Department would prefer the soil from AOC-2 (1,000 cubic yards) and AOC-36 (950 cubic yards) to be reused as backfill at the inverse ponds (AOC-31) rather than soil from AOC-5 (approximately 2,500 cubic yards). Soil samples collected from the AOC-5 soil stockpiles were reported to contain elevated concentrations of polycyclic aromatic hydrocarbons (PAHs), copper, lead, and selenium. This soil should be considered for reuse as landfill daily cover/cap material.
5. The Division of Solid Waste and Hazardous Waste, Bureau of Landfill Compliance and Recycling Management should be contacted regarding any future landfill operation and closure issues.

If you should have any questions regarding this matter, please contact Gary Sanderson, Case Manager, of the Office of Brownfield Reuse at (609) 633-0544.

Sincerely,



Gary Sanderson, Case Manager  
Office of Brownfield Reuse

c: Ken Kloo, NJDEP/OBR  
David Doyle, NJDEP/BEERA  
David Froehlich, NJDEP/ BGWPA  
Gregg R. Micalizio, ENSR  
John Hawk, Warren County Health Department  
Municipal Clerk, Phillipsburg Town

## **ATTACHMENT 2**



FILE  
03710-153-07.3

James E. McGreevey  
Governor

State of New Jersey  
Department of Environmental Protection

Bradley M. Campbell  
Commissioner

Aaron Kleinbaum  
Assistant General Counsel and Director of Environmental Health & Safety  
Ingersoll-Rand Company  
200 Chestnut Ridge Road  
Woodcliff Lake, NJ 07675

MAY 14 2002

Dear Mr. Kleinbaum:

Re: South Side AOC Remedial Investigation Report  
Response to April 9, 2002 Response to Comments  
Ingersoll Rand Site  
Phillipsburg Twp., Warren County

The New Jersey Department of Environmental Protection (NJDEP) has reviewed the aforementioned correspondence and approves Ingersoll-Rand responses. All changes (i.e., inclusion of Appendix B, Final Ecological Evaluation and Draft Deed Notice) shall be included in a revised document so that all changes are consolidated in one report. The NJDEP is also in agreement with Ingersoll Rand that "No Further Action" for AOC's 3A, 3B, 26 and 27 are appropriate.

If you have any questions concerning this correspondence, please call me at (609)-633-7237.

Sincerely,

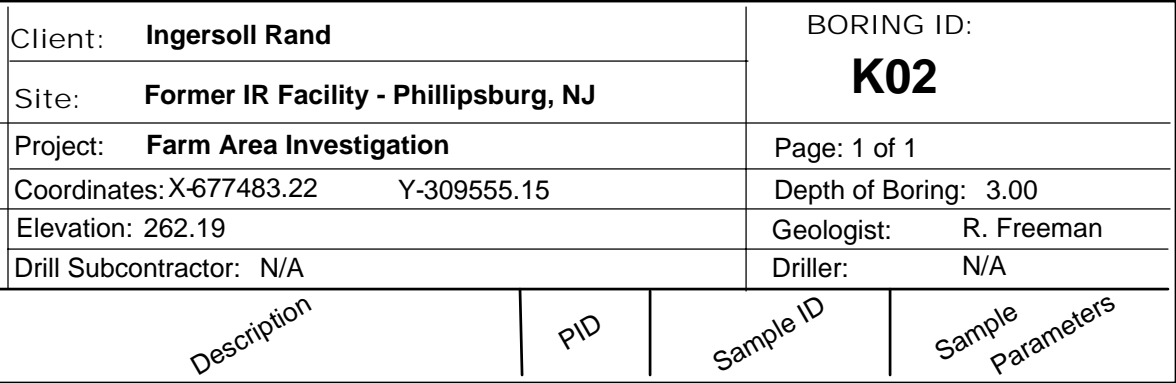



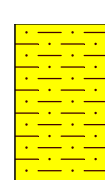

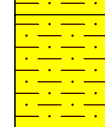
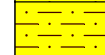
Bob Marcolina, Case Manager  
Bureau of Case Management

c: Christopher Venezia, ENSR  
Dave Froehlich, DPFSR/BGWPA

## **ATTACHMENT 3**






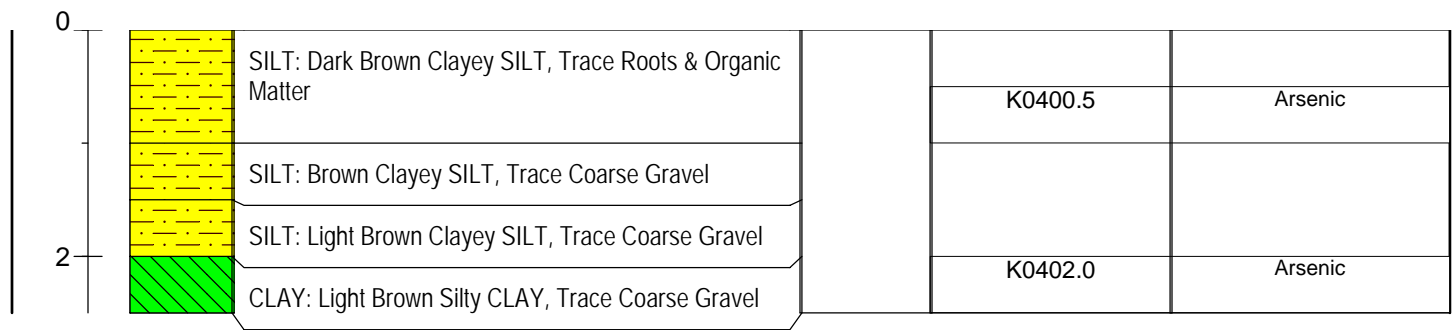
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|--|---|---|---|---------|---------|
|  |  | SILT: Brown Clayey SILT, Little Coarse Gravel, Roots & Organic Matter |  |         |         |
|  |   |   |   | K0201.0 | Arsenic |
|  |  | SILT: Brown Clayey SILT, Trace Coarse Gravel                          |   |         |         |
|  |  | SILT: Light Brown Clayey SILT, Trace Coarse Gravel                    |   | K0202.5 | Arsenic |

Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
Elevation is provided in feet above mean sea level - NAVD 1988.  
Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.





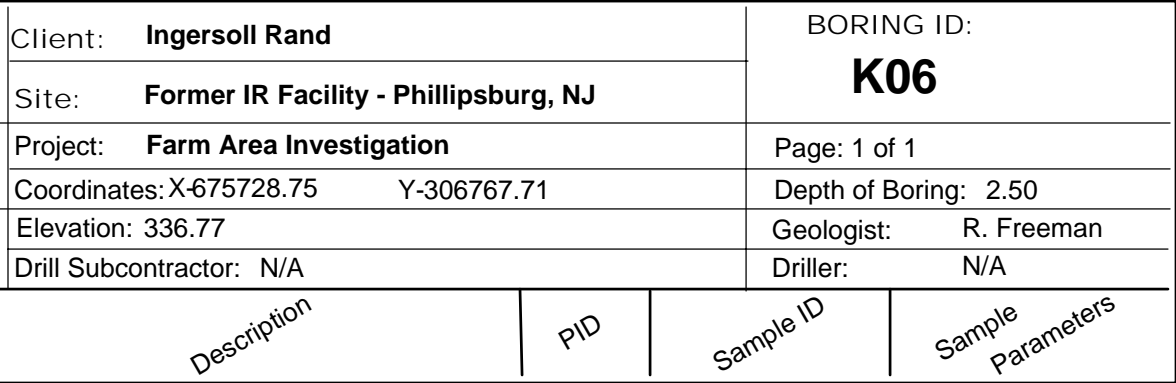
|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>K04</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/10/2005  | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-676268.93      Y-309053.36          |             | Depth of Boring: 2.50    |           |                   |
| End Date:<br>5/10/2005  | Elevation: 250.52                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |



NOTES:


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Elevation is provided in feet above mean sea level - NAVD 1988.  
Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

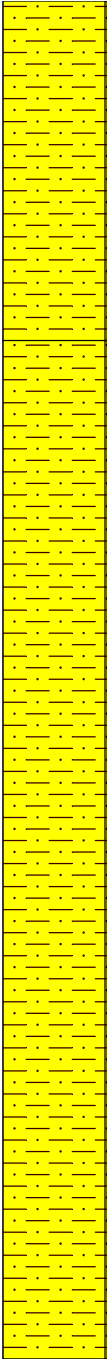





|  |   |  |         |         |
|--|---|--|---------|---------|
|  | SILT: Brown Clayey SILT, Little Coarse Gravel, Roots & Organic Matter |  |         |         |
|  | SILT: Light Brown Clayey SILT, Little Coarse Gravel                   |  | K0601.0 | Arsenic |
|  | CLAY: Light Brown Silty CLAY, Little Coarse Gravel                    |  | K0602.0 | Arsenic |

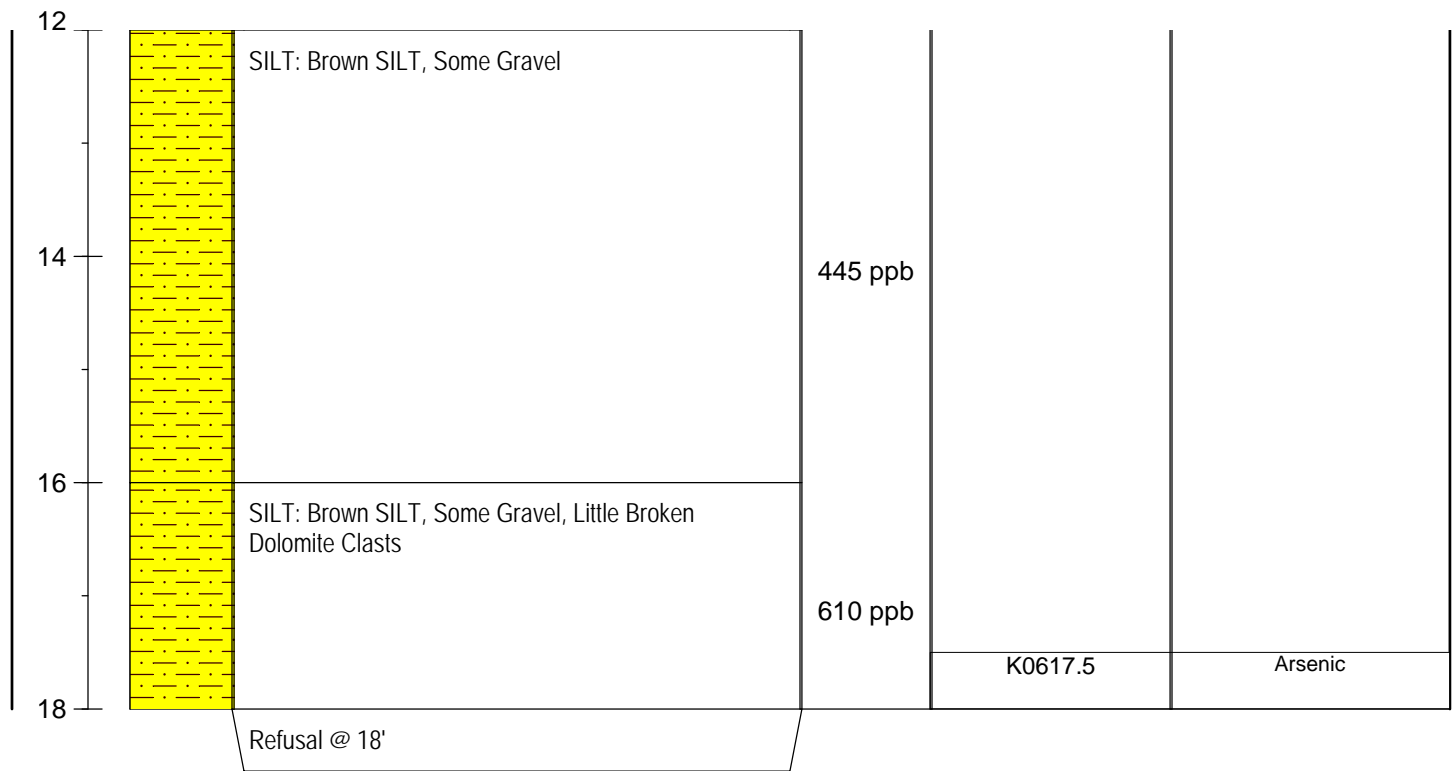
Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
Elevation is provided in feet above mean sea level - NAVD 1988.  
Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>K06-6/7/05</b> |           |                   |
|---|--|-------------|---------------------------------|-----------|-------------------|
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                                 |           |                   |
| Start Date:<br>6/7/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 2                    |           |                   |
|   | Coordinates: X-675728.75      Y-306767.71          |             | Depth of Boring: 18.00          |           |                   |
| End Date:<br>6/7/2005   | Elevation: 336.77                                  |             | Geologist: S. Dolan             |           |                   |
|   | Drill Subcontractor: S&S                           |             | Driller: Dave Trans             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                             | Sample ID | Sample Parameters |

|    |  |  |         |         |         |
|----|--|--|---------|---------|---------|
| 0  |  | SILT: Brown SILT, Little Gravel, Trace Grass & Roots | 545 ppb |         |         |
|    |  |  | 267 ppb |         |         |
| 2  |  |  | 280 ppb |         |         |
|    |  | SILT: Brown SILT, Some Gravel                        | 380 ppb |         |         |
| 4  |  |  | 196 ppb |         |         |
|    |  |  | 169 ppb |         |         |
| 6  |  |  | 256 ppb |         |         |
|    |  |  | 238 ppb |         |         |
| 8  |  |  | 175 ppb | K0608.0 | Arsenic |
|    |  |  | 403 ppb |         |         |
| 10 |  |  |         |         |         |
|    |  |  | 361 ppb |         |         |
| 12 |  |  |         |         |         |


**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988  
 NR - Not Recorded due to equipment malfunction  
 ppm - parts per million, ppb - parts per billion

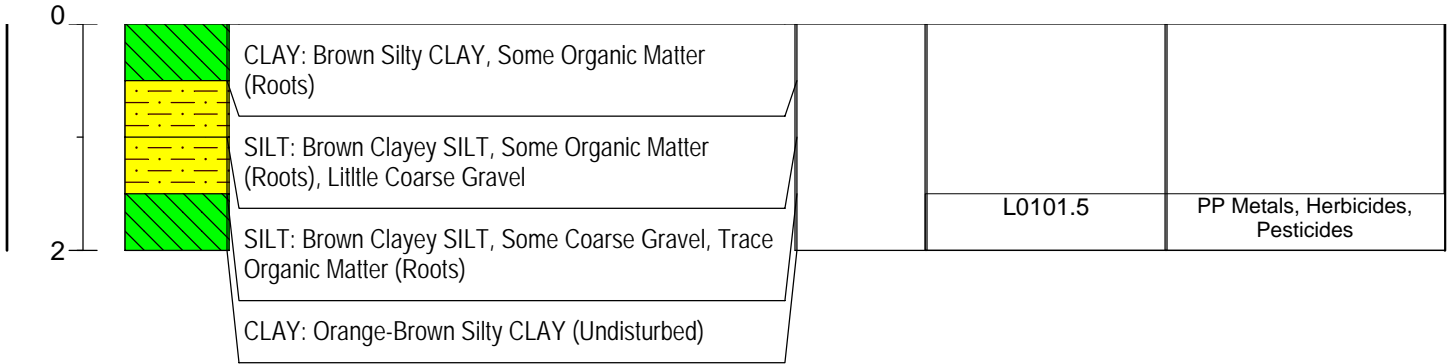
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>K06-6/7/05</b> |           |                   |
|---|--|-------------|---------------------------------|-----------|-------------------|
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                                 |           |                   |
| Start Date:<br>6/7/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 2 of 2                    |           |                   |
|   | Coordinates: X-675728.75      Y-306767.71          |             | Depth of Boring: 18.00          |           |                   |
| End Date:<br>6/7/2005   | Elevation: 336.77                                  |             | Geologist: S. Dolan             |           |                   |
|   | Drill Subcontractor: S&S                           |             | Driller: Dave Trans             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                             | Sample ID | Sample Parameters |



**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988  
 NR - Not Recorded due to equipment malfunction  
 ppm - parts per million, ppb - parts per billion




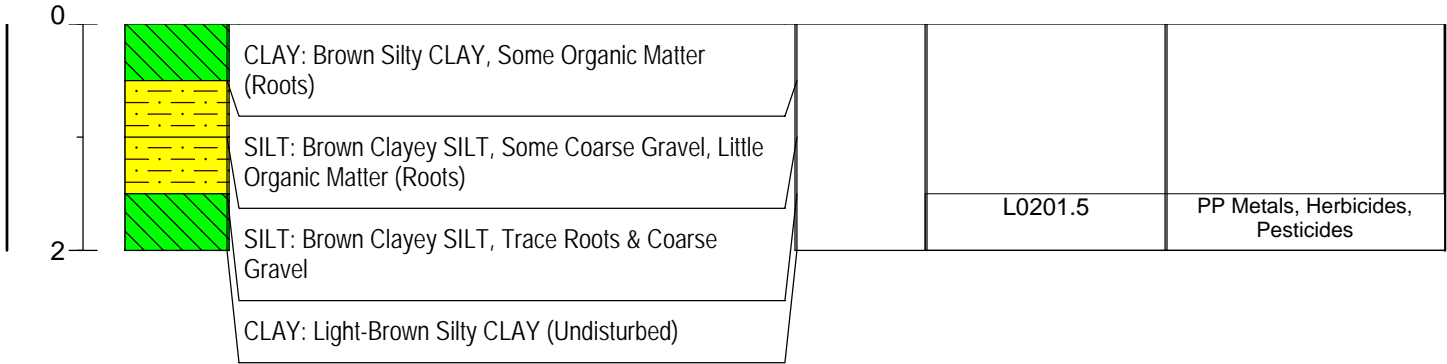
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|---|-----------|---|--|----------------------------------|-----------|-------------------|
|  |           | Client: <b>Ingersoll Rand</b>                             |  | BORING ID:<br><br><b>L01</b>     |           |                   |
|   |           | Site: <b>Former IR Facility - Phillipsburg, NJ</b>        |  |                                  |           |                   |
| Start Date:<br>5/3/2005   |           | Project: <b>Farm Area Investigation</b>                   |  | Page: 1 of 1                     |           |                   |
|   |           | Coordinates: X-679848.33                      Y-307485.89 |  | Depth of Boring:    2.00         |           |                   |
| End Date:<br>5/3/2005   |           | Elevation: 360.49   |  | Geologist:            R. Freeman |           |                   |
|   |           | Drill Subcontractor: N/A                                  |  | Driller:                N/A      |           |                   |
| Depth (ft)  | Lithology | Description   |  | PID                              | Sample ID | Sample Parameters |



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Elevation is provided in feet above mean sea level - NAVD 1988.  
Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.


|   |           |   |  |                               |           |                   |
|---|-----------|---|--|-------------------------------|-----------|-------------------|
|  |           | Client: <b>Ingersoll Rand</b>                             |  | BORING ID:<br><br><b>L02</b>  |           |                   |
|   |           | Site: <b>Former IR Facility - Phillipsburg, NJ</b>        |  |                               |           |                   |
| Start Date:<br>5/3/2005   |           | Project: <b>Farm Area Investigation</b>                   |  | Page: 1 of 1                  |           |                   |
|   |           | Coordinates: X-679892.68                      Y-307944.85 |  | Depth of Boring:   2.00       |           |                   |
| End Date:<br>5/3/2005   |           | Elevation: 340.88   |  | Geologist:         R. Freeman |           |                   |
|   |           | Drill Subcontractor: N/A                                  |  | Driller:             N/A      |           |                   |
| Depth (ft)  | Lithology | Description   |  | PID                           | Sample ID | Sample Parameters |

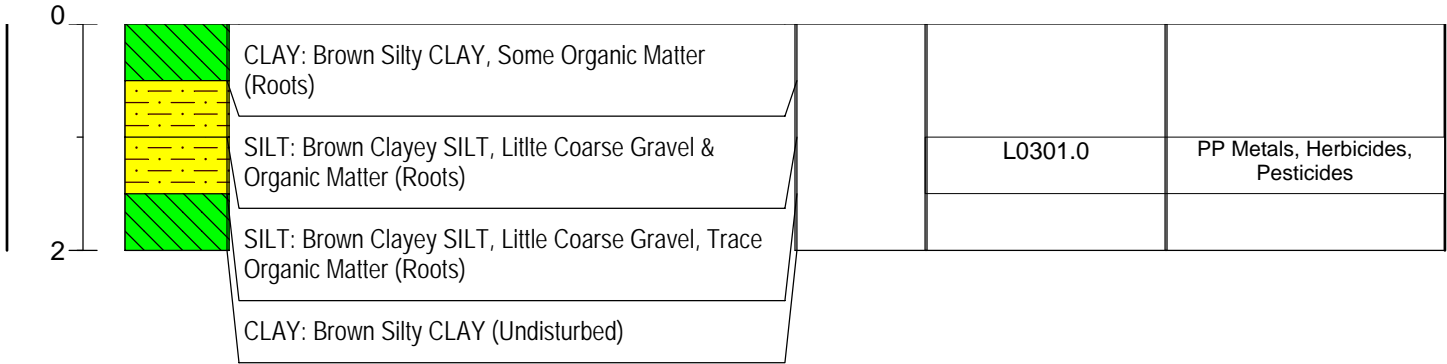


**NOTES:**

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Elevation is provided in feet above mean sea level - NAVD 1988.  
Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.




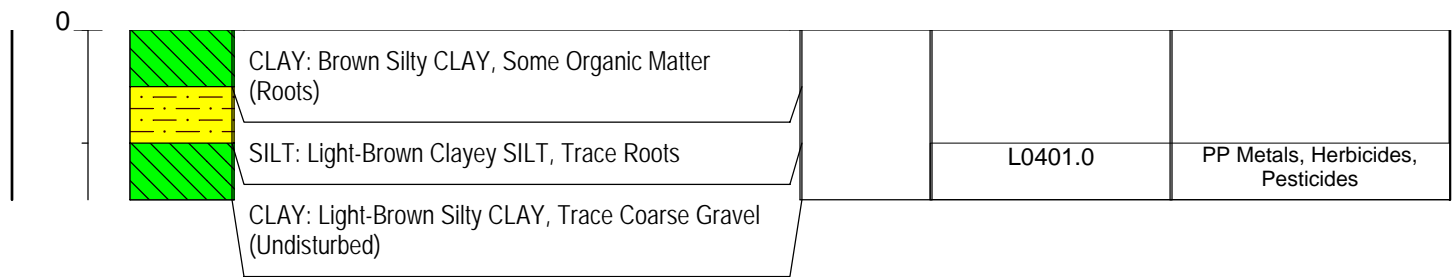
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|---|-----------|---|--|-------------------------------|-----------|-------------------|
|  |           | Client: <b>Ingersoll Rand</b>                             |  | BORING ID:<br><br><b>L03</b>  |           |                   |
|   |           | Site: <b>Former IR Facility - Phillipsburg, NJ</b>        |  |                               |           |                   |
| Start Date:<br>5/3/2005   |           | Project: <b>Farm Area Investigation</b>                   |  | Page: 1 of 1                  |           |                   |
|   |           | Coordinates: X-679326.25                      Y-307726.78 |  | Depth of Boring:   1.50       |           |                   |
| End Date:<br>5/3/2005   |           | Elevation: 351.79   |  | Geologist:         R. Freeman |           |                   |
|   |           | Drill Subcontractor: N/A                                  |  | Driller:                N/A   |           |                   |
| Depth (ft)  | Lithology | Description   |  | PID                           | Sample ID | Sample Parameters |



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Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
Elevation is provided in feet above mean sea level - NAVD 1988.  
Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.


|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L04</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/3/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-679496.03      Y-308161.83          |             | Depth of Boring: 1.50    |           |                   |
| End Date:<br>5/3/2005   | Elevation: 339.09                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |

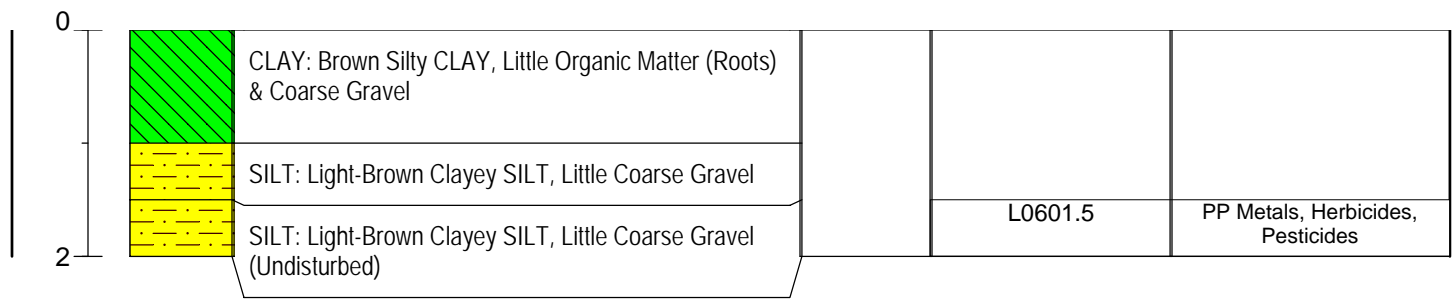


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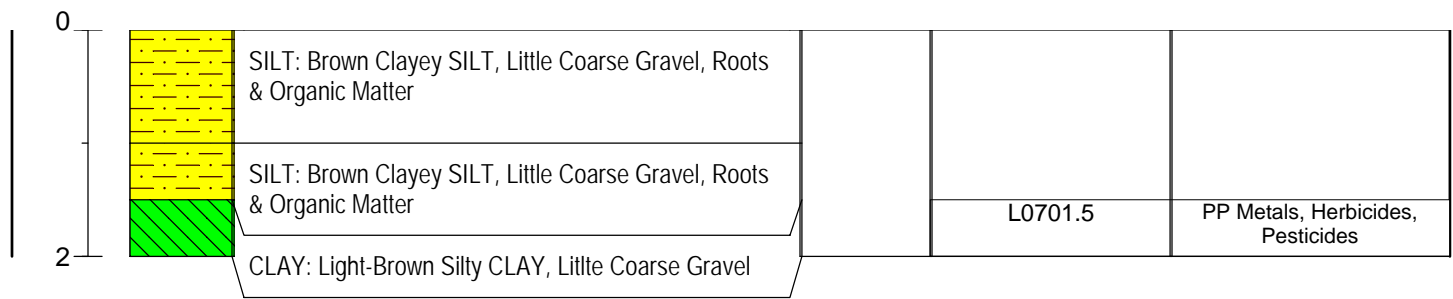


|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L06</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/4/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-679120.1      Y-308356.09           |             | Depth of Boring: 2.00    |           |                   |
| End Date:<br>5/4/2005   | Elevation: 334.53                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |




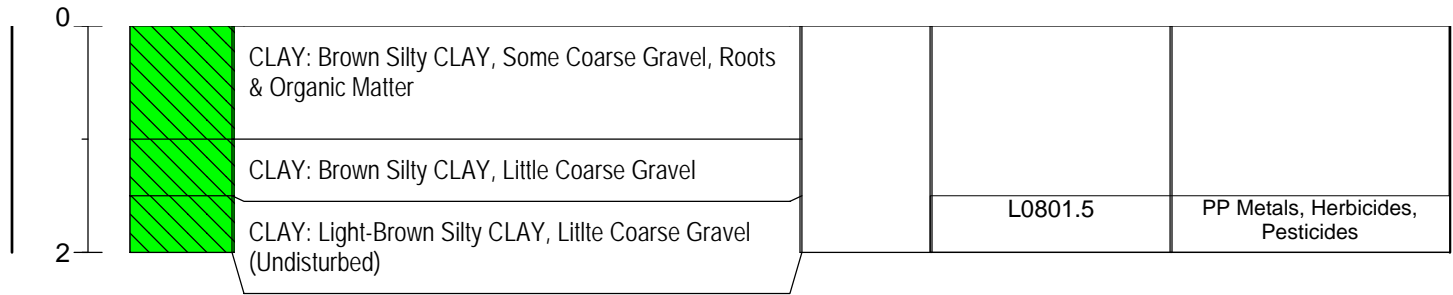
**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
 Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L07</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/4/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-678512.62      Y-308078.93          |             | Depth of Boring: 2.00    |           |                   |
| End Date:<br>5/4/2005   | Elevation: 343.59                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |




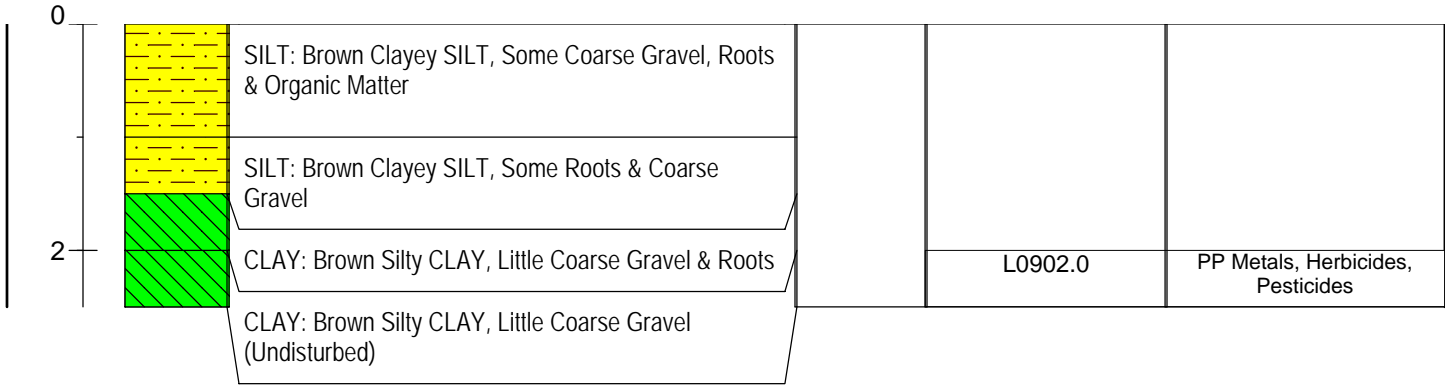
**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
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|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L08</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/4/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-678742.76      Y-308551.82          |             | Depth of Boring: 2.00    |           |                   |
| End Date:<br>5/4/2005   | Elevation: 326.33                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |

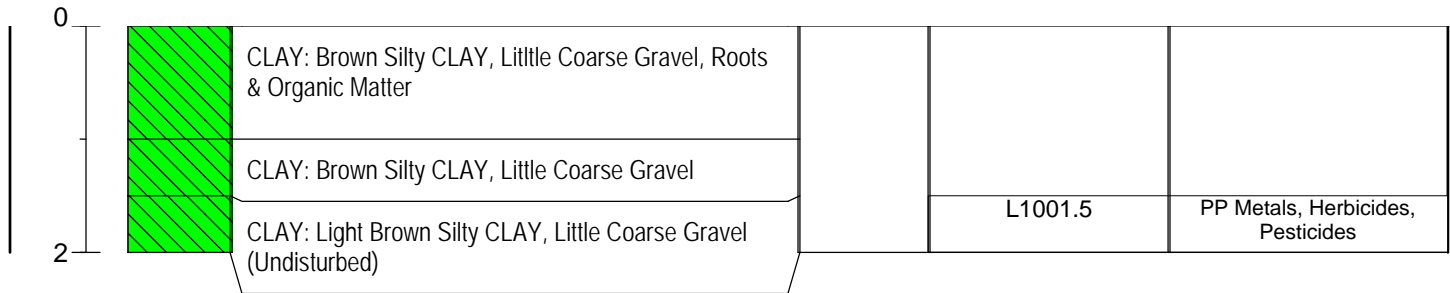
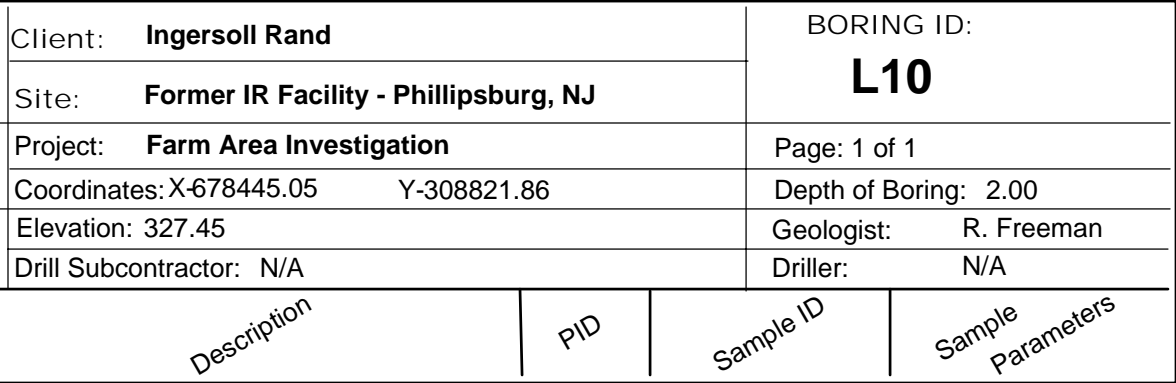


**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
 Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L09</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/4/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-678179.68      Y-308321.07          |             | Depth of Boring: 2.50    |           |                   |
| End Date:<br>5/4/2005   | Elevation: 334.93                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |




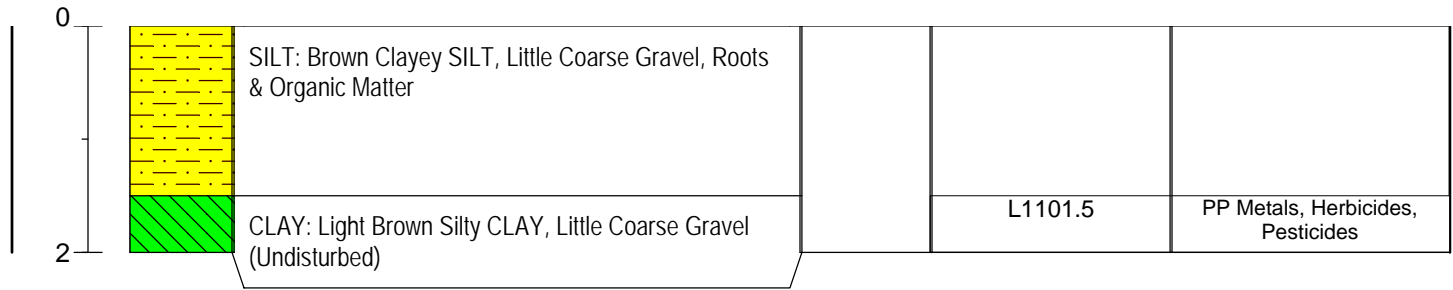
**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
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Elevation is provided in feet above mean sea level - NAVD 1988.  
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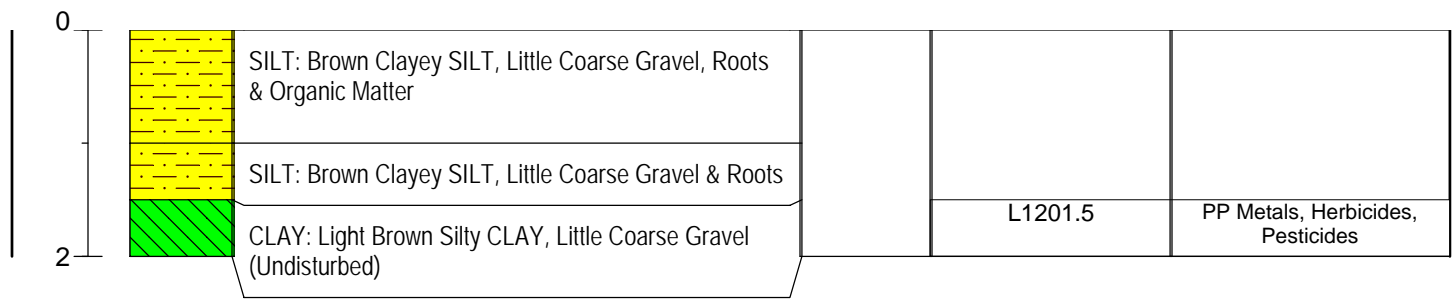


|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L11</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/5/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-677442.92      Y-308162.04          |             | Depth of Boring: 2.00    |           |                   |
| End Date:<br>5/5/2005   | Elevation: 306.02                                  |             | Geologist: A. Mosuly     |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |




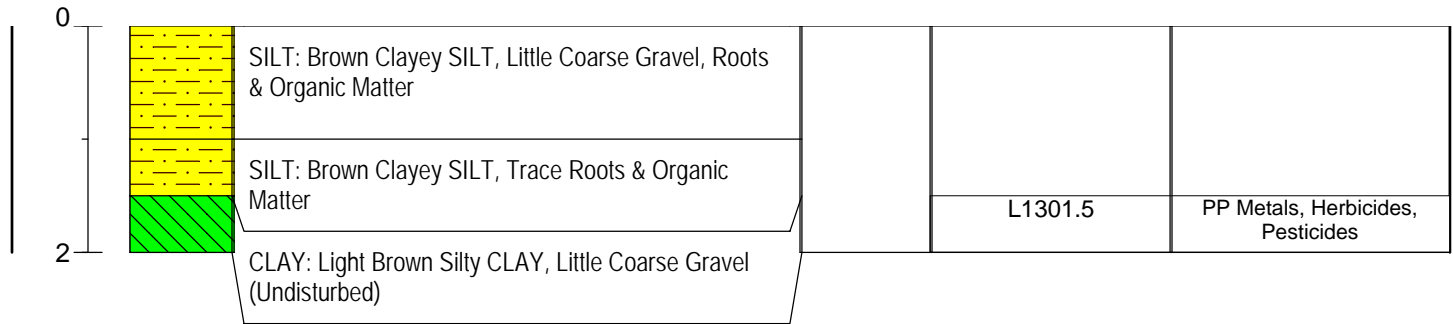
**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
 Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L12</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/4/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-677826.24      Y-308598.78          |             | Depth of Boring: 2.00    |           |                   |
| End Date:<br>5/4/2005   | Elevation: 327.14                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |




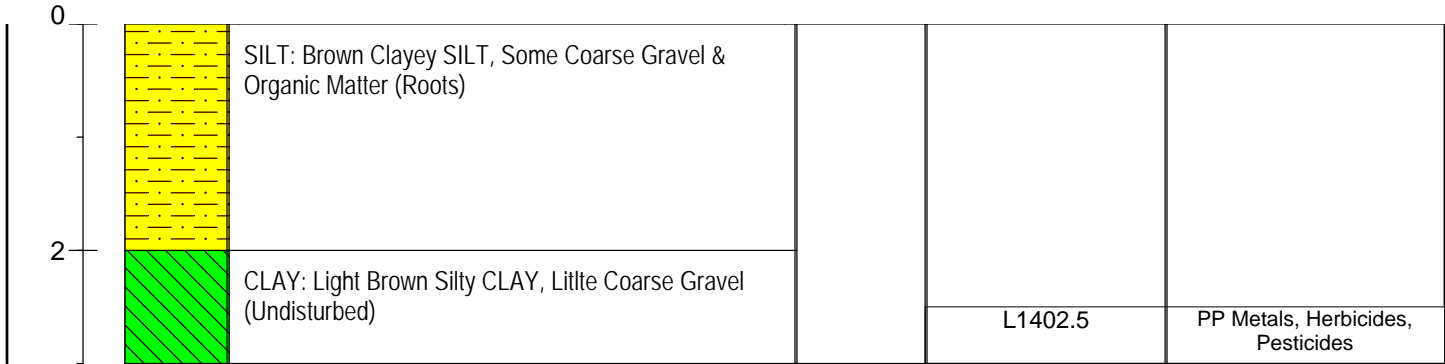
**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
 Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L13</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/5/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-678137.61      Y-309049.77          |             | Depth of Boring: 2.00    |           |                   |
| End Date:<br>5/5/2005   | Elevation: 326.30                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |




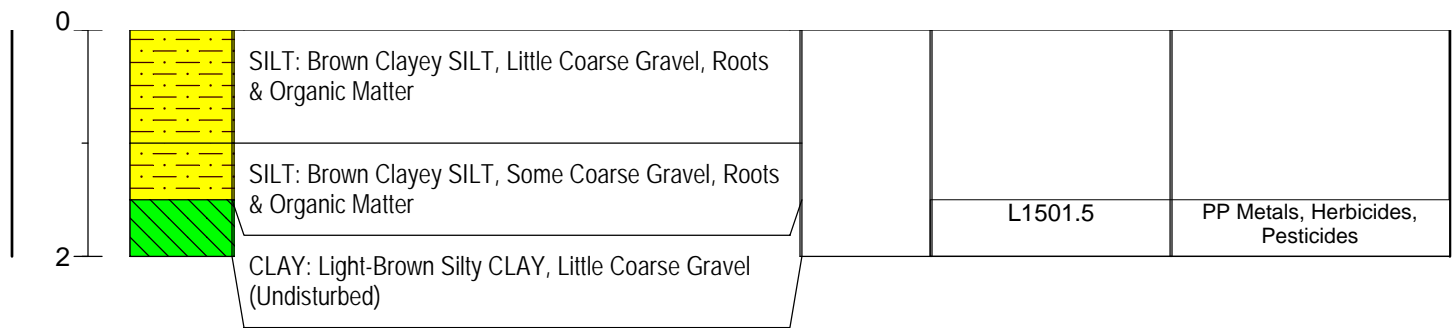
**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
 Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L14</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/6/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-677037.52      Y-308389.38          |             | Depth of Boring: 3.00    |           |                   |
| End Date:<br>5/6/2005   | Elevation: 283.26                                  |             | Geologist: A. Mosuly     |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |




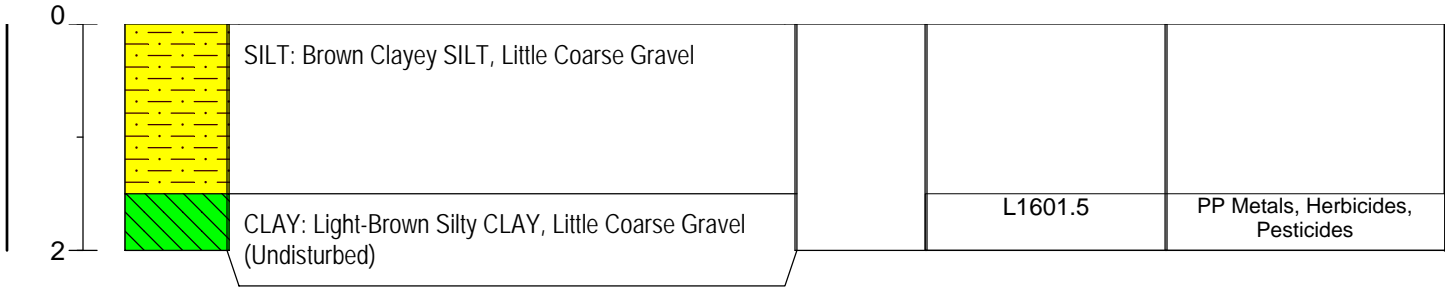
**NOTES:**  
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 Elevation is provided in feet above mean sea level - NAVD 1988.  
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|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L15</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/6/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-677374.94      Y-308910.02          |             | Depth of Boring: 2.00    |           |                   |
| End Date:<br>5/6/2005   | Elevation: 277.49                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |




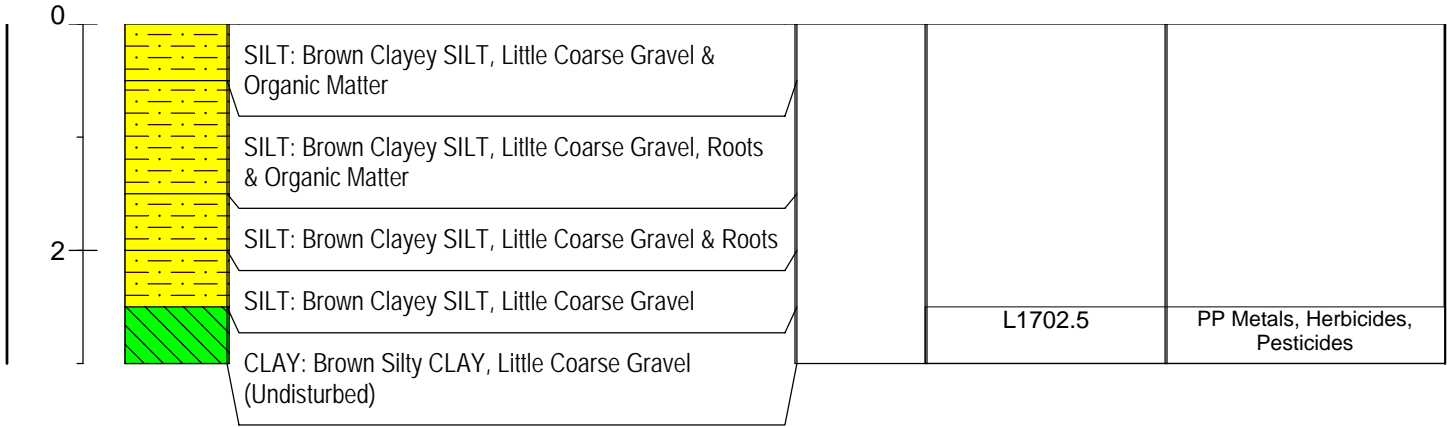
**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
 Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L16</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/4/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-677812.49      Y-309298.02          |             | Depth of Boring: 2.00    |           |                   |
| End Date:<br>5/4/2005   | Elevation: 314.02                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |

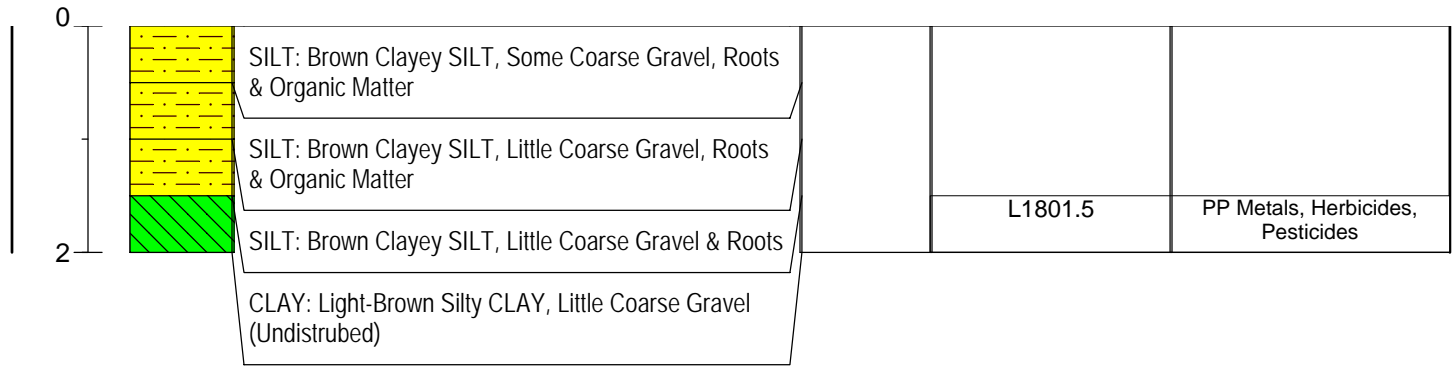
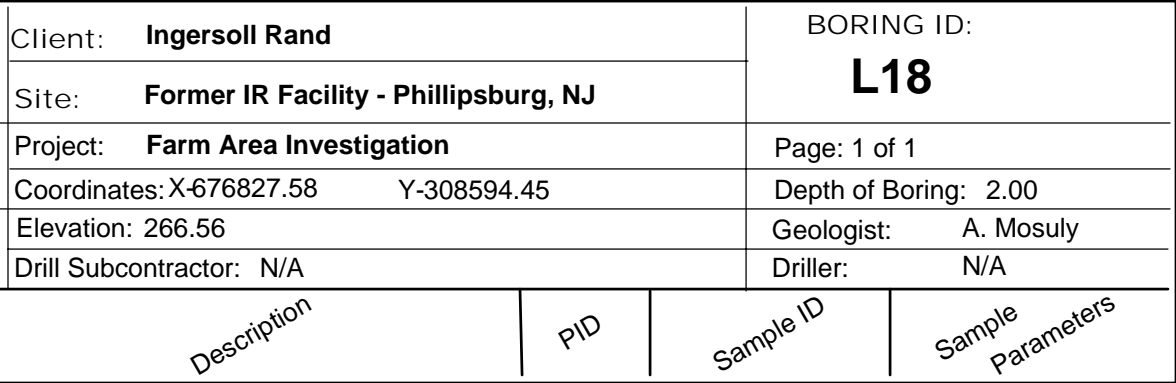


**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
 Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

|   |           |   |  |                                 |           |                   |
|---|-----------|---|--|---------------------------------|-----------|-------------------|
|  |           | Client: <b>Ingersoll Rand</b>                             |  | BORING ID:<br><b>L17</b>        |           |                   |
|   |           | Site: <b>Former IR Facility - Phillipsburg, NJ</b>        |  |                                 |           |                   |
| Start Date:<br>5/5/2005   |           | Project: <b>Farm Area Investigation</b>                   |  | Page: 1 of 1                    |           |                   |
|   |           | Coordinates: X-676680.49                      Y-308183.04 |  | Depth of Boring: 3.00           |           |                   |
| End Date:<br>5/5/2005   |           | Elevation: 262.31   |  | Geologist:            A. Mosuly |           |                   |
|   |           | Drill Subcontractor: N/A                                  |  | Driller:                N/A     |           |                   |
| Depth (ft)  | Lithology | Description   |  | PID                             | Sample ID | Sample Parameters |




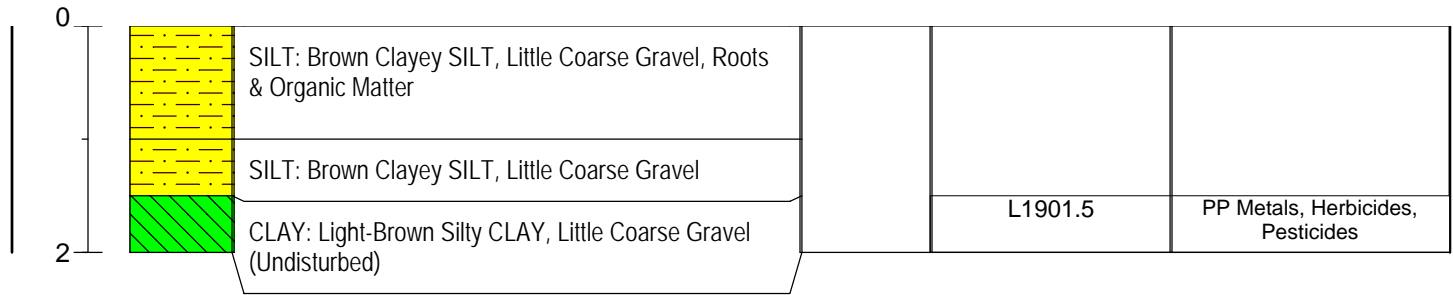
**NOTES:**  
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 Elevation is provided in feet above mean sea level - NAVD 1988.  
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Elevation is provided in feet above mean sea level - NAVD 1988.  
Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

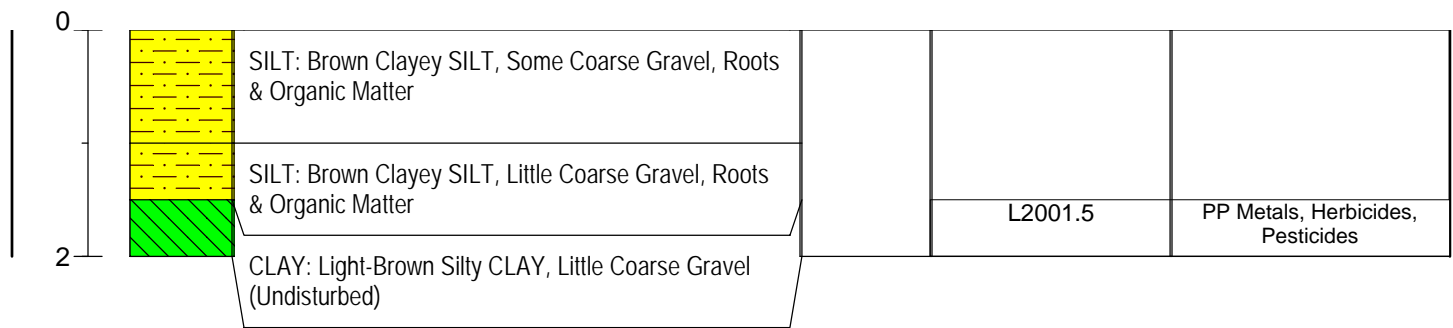


|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L19</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/6/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-677246.45      Y-309180.28          |             | Depth of Boring: 2.00    |           |                   |
| End Date:<br>5/6/2005   | Elevation: 253.67                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |




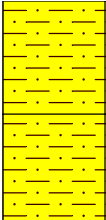

**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
 Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L20</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/6/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-676396.45      Y-308021.15          |             | Depth of Boring: 2.00    |           |                   |
| End Date:<br>5/6/2005   | Elevation: 270.67                                  |             | Geologist: A. Mosuly     |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |



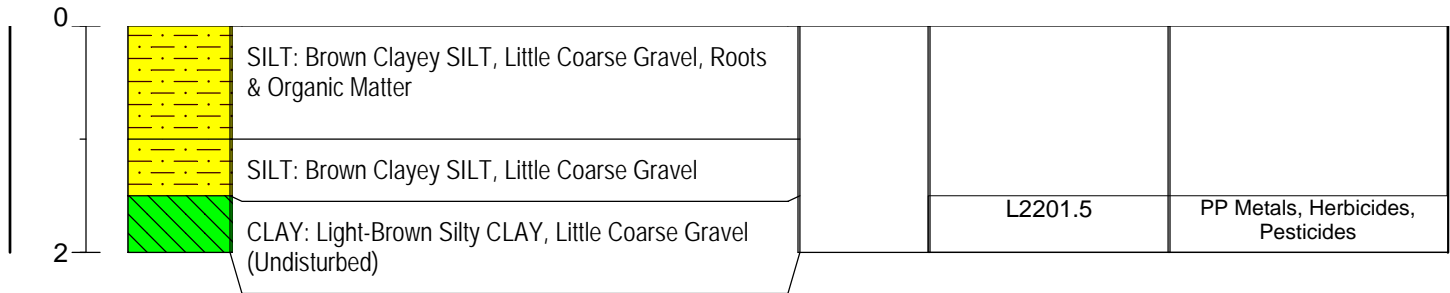
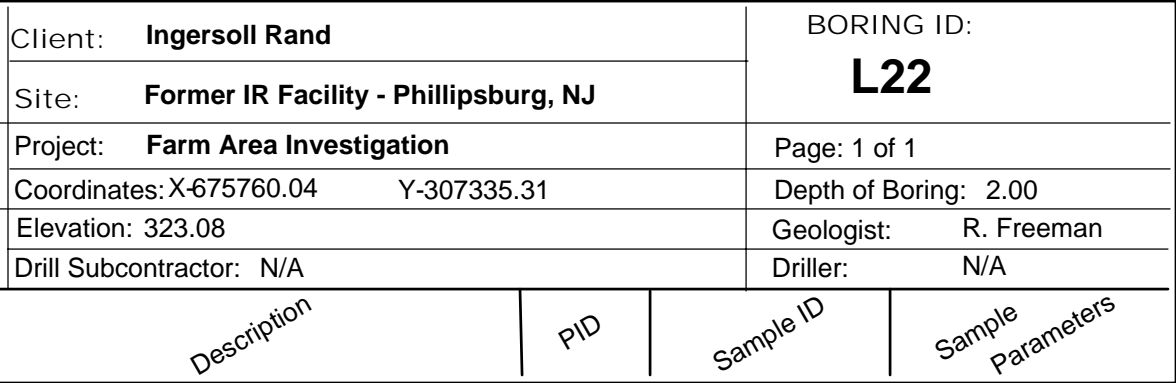
**NOTES:**  
 Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
 Elevation is provided in feet above mean sea level - NAVD 1988.  
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|   |  |             |                          |           |                   |
|---|--|-------------|--------------------------|-----------|-------------------|
|  | Client: <b>Ingersoll Rand</b>                      |             | BORING ID:<br><b>L21</b> |           |                   |
|   | Site: <b>Former IR Facility - Phillipsburg, NJ</b> |             |                          |           |                   |
| Start Date:<br>5/6/2005   | Project: <b>Farm Area Investigation</b>            |             | Page: 1 of 1             |           |                   |
|   | Coordinates: X-676583.75      Y-308810.02          |             | Depth of Boring: 2.50    |           |                   |
| End Date:<br>5/6/2005   | Elevation: 232.91                                  |             | Geologist: R. Freeman    |           |                   |
|   | Drill Subcontractor: N/A                           |             | Driller: N/A             |           |                   |
| Depth (ft)  | Lithology  | Description | PID                      | Sample ID | Sample Parameters |

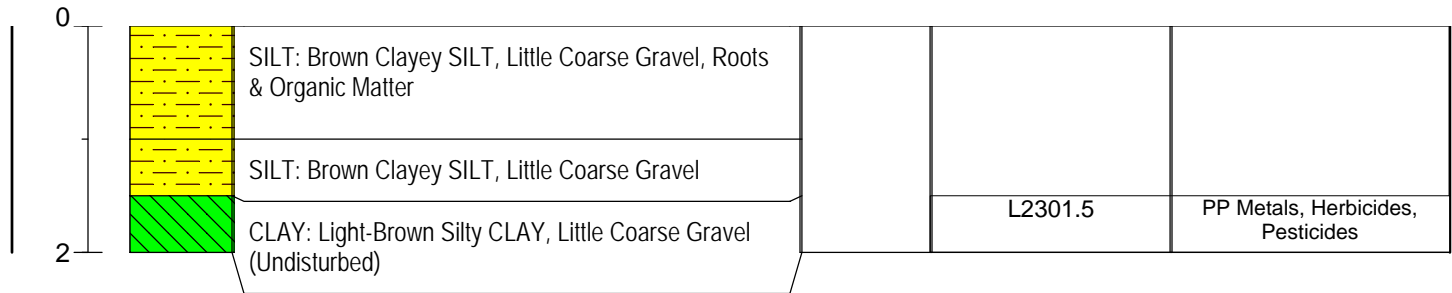
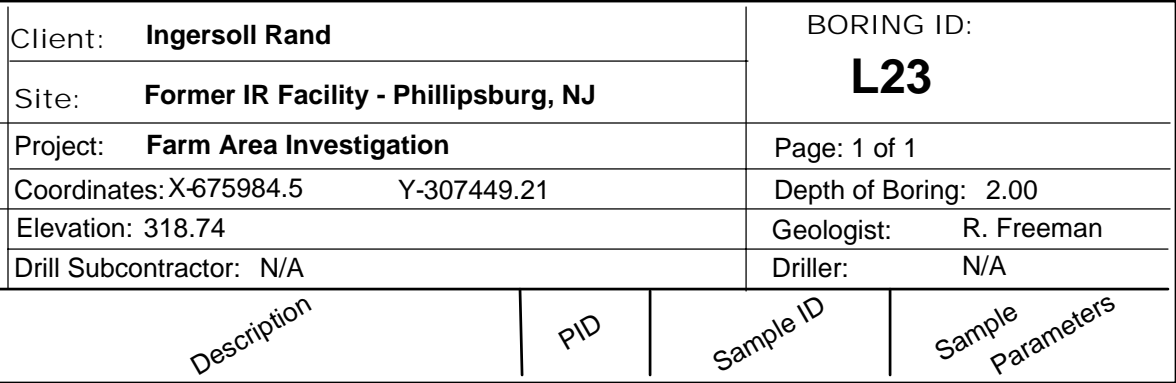
|   |   |   |  |         |                                   |
|---|---|---|--|---------|-----------------------------------|
| 0 |  | SILT: Brown Clayey SILT, Some Coarse Gravel & Roots |  |         |                                   |
|   |   | SILT: Brown Clayey SILT, Little Coarse Gravel       |  |         |                                   |
|   |   |   |  |         |                                   |
| 2 |  | CLAY: Light-Brown Silty CLAY (Undisturbed)          |  | L2102.0 | PP Metals, Herbicides, Pesticides |

**NOTES:**


Coordinates are provided in New Jersey State Plane NAD 1983 Feet.  
Elevation is provided in feet above mean sea level - NAVD 1988.  
Where PID results are not displayed, borings were advanced by hand auger and PID readings were not recorded.

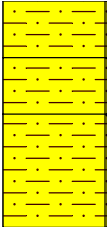


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Elevation is provided in feet above mean sea level - NAVD 1988.  
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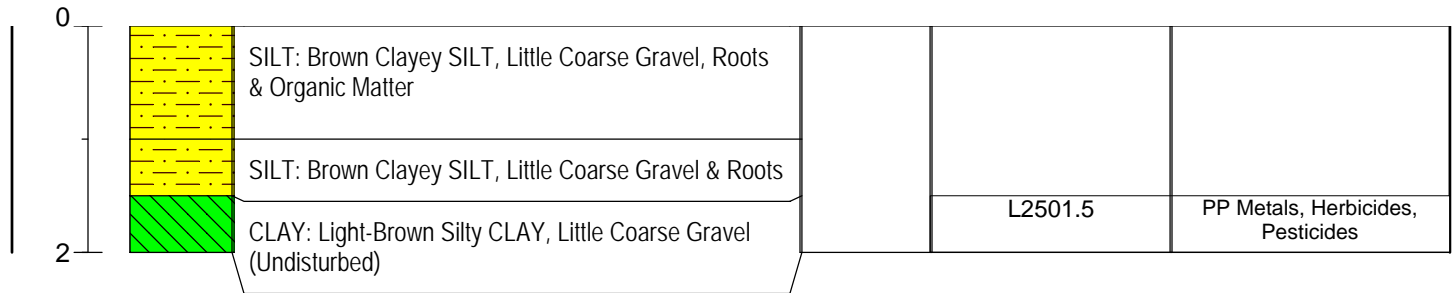
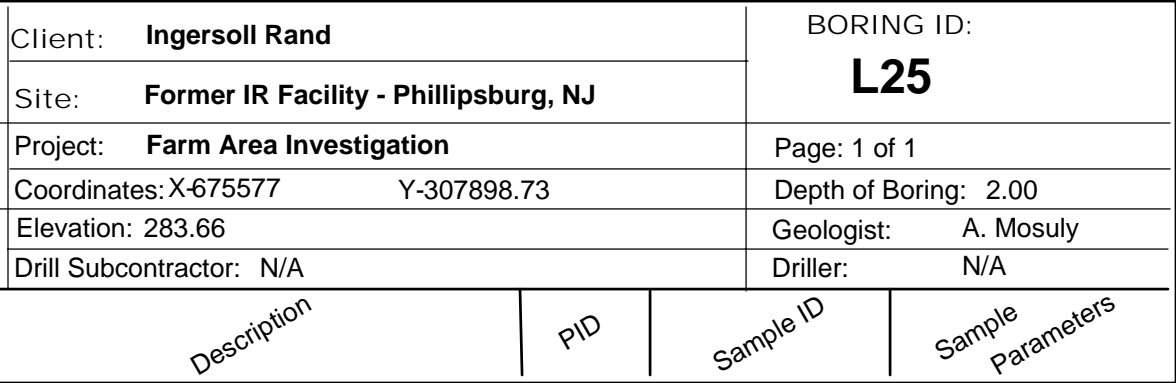
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Elevation is provided in feet above mean sea level - NAVD 1988.  
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|   |           |   |  |                               |           |                   |
|---|-----------|---|--|-------------------------------|-----------|-------------------|
|  |           | Client: <b>Ingersoll Rand</b>                             |  | BORING ID:<br><br><b>L24</b>  |           |                   |
|   |           | Site: <b>Former IR Facility - Phillipsburg, NJ</b>        |  |                               |           |                   |
| Start Date:<br>5/6/2005   |           | Project: <b>Farm Area Investigation</b>                   |  | Page: 1 of 1                  |           |                   |
|   |           | Coordinates: X-676230.29                      Y-307586.04 |  | Depth of Boring:   2.00       |           |                   |
| End Date:<br>5/6/2005   |           | Elevation: 309.47   |  | Geologist:         R. Freeman |           |                   |
|   |           | Drill Subcontractor: N/A                                  |  | Driller:                N/A   |           |                   |
| Depth (ft)  | Lithology | Description   |  | PID                           | Sample ID | Sample Parameters |

|  |   |   |  |         |                                   |
|--|---|---|--|---------|-----------------------------------|
| <div> <div>0</div> <div></div> <div>2</div> </div> |  | SILT: Brown Clayey SILT, Little Coarse Gravel & Roots             |  |         |                                   |
|  |   | SILT: Brown Clayey SILT, Little Coarse Gravel                     |  |         |                                   |
|  |   | SILT: Light Brown Clayey SILT, Little Coarse Gravel (Undisturbed) |  |         |                                   |
|  |   |   |  | L2401.5 | PP Metals, Herbicides, Pesticides |

NOTES:

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